

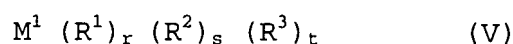
# ATTACHMENT A

Claims 1 - 20: (Cancelled)

5 21. (Previously presented) A process for preparing a catalyst solid for olefin polymerization by contacting, without any isolation of an intermediate,

(A) at least one organic transition metal compound;

10 (B) at least one organometallic compound of formula (V)



where

15  $M^1$  is an alkali metal, an alkaline earth metal, or a metal of group 13 of the Periodic Table;

20  $R^1$  is hydrogen,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{15}$ -aryl, halo- $C_1$ - $C_{10}$ -alkyl, halo- $C_6$ - $C_{15}$ -aryl,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -alkylaryl,  $C_1$ - $C_{10}$ -alkoxy, halo- $C_7$ - $C_{40}$ -alkylaryl, halo- $C_7$ - $C_{40}$ -arylalkyl, or halo- $C_1$ - $C_{10}$ -alkoxy;

25  $R^2$  and  $R^3$  are each hydrogen, halogen,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{15}$ -aryl, halo- $C_1$ - $C_{10}$ -alkyl, halo- $C_6$ - $C_{15}$ -aryl,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -alkylaryl,  $C_1$ - $C_{10}$ -alkoxy, halo- $C_7$ - $C_{40}$ -alkylaryl, halo- $C_7$ - $C_{40}$ -arylalkyl, or  
30 halo- $C_1$ - $C_{10}$ -alkoxy;

$r$  is an integer from 1 to 3; and

$s$  and  $t$  are integers from 0 to 2, where the sum  $r+s+t$  corresponds to the valence of  $M^1$ ;

35 (C) at least one organic compound comprising at least one functional group comprising active hydrogen, wherein the functional group is selected from the groups consisting of hydroxyl group, primary and  
40 secondary amino groups, mercapto groups, silanol

groups, carboxyl groups, amido groups, and imido groups;

(D) at least one Lewis base; and

(E) at least one support.

5

22. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 21, wherein the component (B) is a mixture of at least two different organometallic compounds.

10

23. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 22, wherein the component (B) is a mixture of at least one aluminum-containing organometallic compound and at least one boron-containing organometallic compound.

15

24. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 22, wherein the component (B) comprises at least two different aluminum-containing organometallic compounds.

20

25. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 21, wherein the organic compound of component (C) comprises at least one hydroxyl group.

25

26. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 25, wherein the component (C) is a compound of formula (VI)

30



where

40

A is an atom of group 13, 14 or 15 of the Periodic

Table, or a group comprising from 2 to 20 carbon atoms;

5         $R^4$     are identical or different, and are each independently of one another, hydrogen, halogen,  $C_1$ - $C_{20}$ -alkyl,  $C_1$ - $C_{20}$ -haloalkyl,  $C_1$ - $C_{10}$ -alkoxy,  $C_6$ - $C_{20}$ -aryl,  $C_6$ - $C_{20}$ -haloaryl,  $C_6$ - $C_{20}$ -aryloxy,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -haloarylalkyl,  $C_7$ - $C_{40}$ -alkylaryl,  $C_7$ - $C_{40}$ -haloalkylaryl, or  $OSiR_3^5$ ; where

15         $R^5$     are identical or different, and are each independently of one another, hydrogen, halogen,  $C_1$ - $C_{20}$ -alkyl,  $C_1$ - $C_{20}$ -haloalkyl,  $C_1$ - $C_{10}$ -alkoxy,  $C_6$ - $C_{20}$ -aryl,  $C_6$ - $C_{20}$ -haloaryl,  $C_6$ - $C_{20}$ -aryloxy,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -haloarylalkyl,  $C_7$ - $C_{40}$ -alkylaryl, or  $C_7$ - $C_{40}$ -haloalkylaryl;

20         $y$     is at least 1; and

$x$     is an integer from 0 to 41.

25        27. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 23, wherein the component (B) comprises at least two different aluminum-containing organometallic compounds.

35        28. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 27, wherein the organic compound of component (C) comprises at least one hydroxyl group.

40        29. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 28, wherein the component (C) is a compound of formula (VI)



where

A is an atom of main group 13, 14 or 15 of the Periodic Table, or a group comprising from 2 to 20 carbon atoms;

$R^4$  are identical or different, and are each independently of one another, hydrogen, halogen,  $C_1$ - $C_{20}$ -alkyl,  $C_1$ - $C_{20}$ -haloalkyl,  $C_1$ - $C_{10}$ -alkoxy,  $C_6$ - $C_{20}$ -aryl,  $C_6$ - $C_{20}$ -haloaryl,  $C_6$ - $C_{20}$ -aryloxy,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -haloarylalkyl,  $C_7$ - $C_{40}$ -alkylaryl,  $C_7$ - $C_{40}$ -haloalkylaryl, or  $OSiR_3^5$ , where

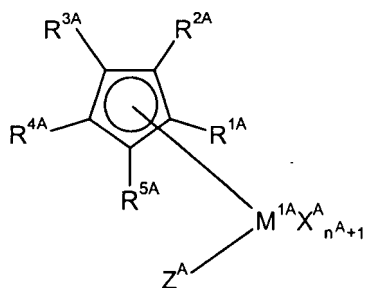
$R^5$  are identical or different, and are each independently of one another, hydrogen, halogen,  $C_1$ - $C_{20}$ -alkyl,  $C_1$ - $C_{20}$ -haloalkyl,  $C_1$ - $C_{10}$ -alkoxy,  $C_6$ - $C_{20}$ -aryl,  $C_6$ - $C_{20}$ -haloaryl,  $C_6$ - $C_{20}$ -aryloxy,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -haloarylalkyl,  $C_7$ - $C_{40}$ -alkylaryl, or  $C_7$ - $C_{40}$ -haloalkylaryl;

y is at least 1; and

x is an integer from 0 to 41.

30. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 28, wherein the component (A) comprises at least one cyclopentadienyl-type ligand.

31. (Previously presented) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 21, wherein the component (A) is of formula (I)



(I)

wherein

$M^{1A}$

is titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum or tungsten, or an element of group 3 or lanthanides of the Periodic Table;

$X^A$

are identical or different, and are each independently of one another, fluorine, chlorine, bromine, iodine, hydrogen,  $C_1$ - $C_{10}$ -alkyl,  $C_2$ - $C_{10}$ -alkenyl,  $C_6$ - $C_{15}$ -aryl,  $C_7$ - $C_{40}$ -alkylaryl,  $C_7$ - $C_{40}$ -arylalkyl,  $-OR^{6A}$ , or  $-NR^{6A}R^{7A}$ , or two  $X^A$  radicals are joined to form a substituted or unsubstituted diene ligand;

$R^{6A}$  and  $R^{7A}$

are identical or different, and are each independently of one another,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{15}$ -aryl,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -alkylaryl, fluoroalkyl, fluoroaryl, wherein the  $C_7$ - $C_{40}$ -arylalkyl or  $C_7$ - $C_{40}$ -alkylaryl comprise from 1 to 19 carbon atoms in the alkyl radical and from 6 to 21 carbon atoms in the aryl radical;

$n^A$

is 1, 2 or 3, where  $n^A$  is such that component (A) of formula (I) is uncharged;

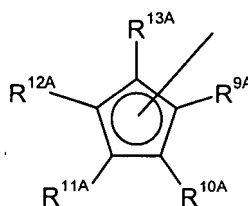
$R^{1A}$  to  $R^{5A}$

are identical or different, and are each independently of one another, hydrogen,

C<sub>1</sub>-C<sub>22</sub>-alkyl, 5- to 7-membered cycloalkyl or cycloalkenyl which optionally bear C<sub>1</sub>-C<sub>10</sub>-alkyl groups as substituents, C<sub>2</sub>-C<sub>22</sub>-alkenyl, C<sub>6</sub>-C<sub>22</sub>-aryl, C<sub>7</sub>-C<sub>40</sub>-arylalkyl, C<sub>7</sub>-C<sub>40</sub>-alkylaryl, -NR<sup>8A</sup><sub>2</sub>, -N(SiR<sup>8A</sup><sub>3</sub>)<sub>2</sub>, -OR<sup>8A</sup>, -OSiR<sup>8A</sup><sub>3</sub>, -SiR<sup>8A</sup><sub>3</sub>, where the radicals R<sup>1A</sup> to R<sup>5A</sup> may optionally be substituted by at least one halogen, or two radicals R<sup>1A</sup> to R<sup>5A</sup>, in particular adjacent radicals, together with the atoms connecting them are joined to form a five-, six- or seven-membered ring, or a five-, six- or seven-membered heterocycle comprising at least one atom selected from the group consisting of N, P, O and S;

R<sup>8A</sup> are identical or different, and are each independently of one another, C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkyl, C<sub>6</sub>-C<sub>15</sub>-aryl, C<sub>1</sub>-C<sub>4</sub>-alkoxy, or C<sub>6</sub>-C<sub>10</sub>-aryloxy; and

Z<sup>A</sup> is as defined for X<sup>A</sup>, or is

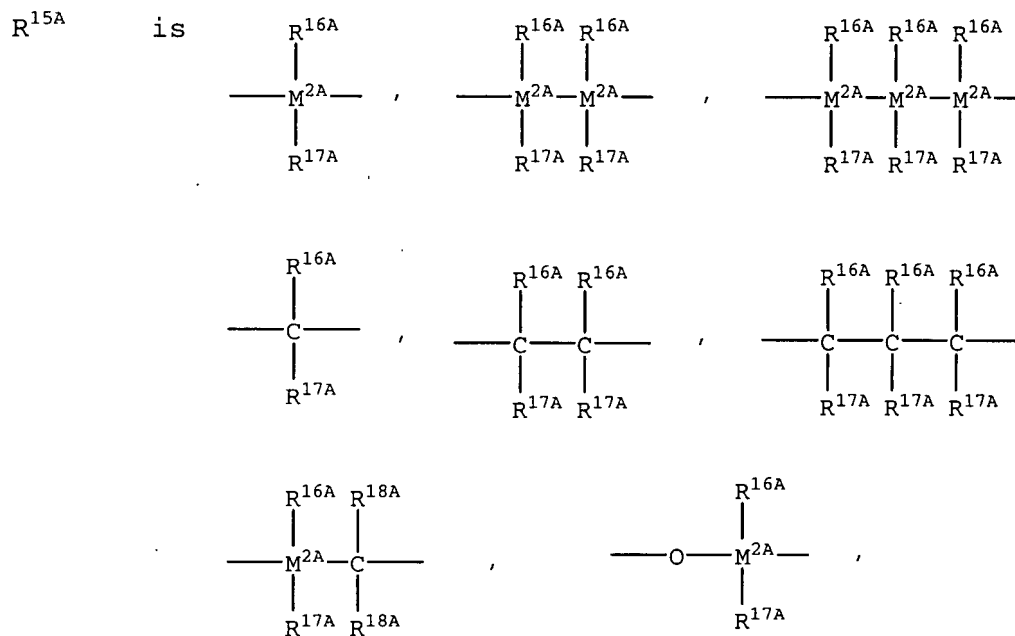


where

R<sup>9A</sup> to R<sup>13A</sup> are identical or different, and are each independently of one another, hydrogen, C<sub>1</sub>-C<sub>22</sub>-alkyl, 5- to 7-membered cycloalkyl or cycloalkenyl which optionally bear C<sub>1</sub>-C<sub>10</sub>-alkyl groups as substituents, C<sub>2</sub>-C<sub>22</sub>-alkenyl, C<sub>6</sub>-C<sub>22</sub>-aryl, C<sub>7</sub>-C<sub>40</sub>-arylalkyl, C<sub>7</sub>-C<sub>40</sub>-alkylaryl, -NR<sup>14A</sup><sub>2</sub>, -N(SiR<sup>14A</sup><sub>3</sub>)<sub>2</sub>, -OR<sup>14A</sup>, -OSiR<sup>14A</sup><sub>3</sub>, or -

SiR<sup>14A</sup><sub>3</sub>, where R<sup>9A</sup> to R<sup>13A</sup> may also be substituted by halogen, and/or two radicals R<sup>9A</sup> to R<sup>13A</sup> together with the atoms connecting them may be joined to form a five-, six- or seven-membered ring, or a five-, six- or seven-membered heterocycle comprising at least one atom selected from the group consisting of N, P, O and S;

R<sup>14A</sup> are identical or different, and are each independently of one another, C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkyl, C<sub>6</sub>-C<sub>15</sub>-aryl, C<sub>1</sub>-C<sub>4</sub>-alkoxy, or C<sub>6</sub>-C<sub>10</sub>-aryloxy, or R<sup>4A</sup> and Z<sup>A</sup> together form an -R<sup>15A</sup><sub>v</sub>A-A<sup>A</sup>- group, where



-BR<sup>16A</sup>-, -(BNR<sup>16A</sup>R<sup>17A</sup>)-, -AlR<sup>16A</sup>-, -Ge-, -Sn-, -O-,  
 -S-, -SO-, -SO<sub>2</sub>-, -NR<sup>16A</sup>-, -CO-, -PR<sup>16A</sup>- or -  
 (POR<sup>16A</sup>)-,

where

$R^{16A}$ ,  $R^{17A}$  and  $R^{18A}$  are identical or different, and are  
 each independently of one another,  
 hydrogen, halogen, a trimethylsilyl  
 group, a  $C_1$ - $C_{10}$ -alkyl group, a  $C_1$ - $C_{10}$ -  
 fluoroalkyl group, a  $C_6$ - $C_{10}$ -fluoroaryl  
 group, a  $C_6$ - $C_{10}$ -aryl group, a  $C_1$ - $C_{10}$ -  
 alkoxy group, a  $C_7$ - $C_{15}$ -alkylaryloxy  
 group, a  $C_2$ - $C_{10}$ -alkenyl group, a  $C_7$ - $C_{40}$ -  
 arylalkyl group, a  $C_8$ - $C_{40}$ -arylalkenyl  
 group, or a  $C_7$ - $C_{40}$ -alkylaryl group, or  
 two adjacent radicals together with the  
 atoms connecting them form a saturated  
 or unsaturated ring having from 4 to  
 15 carbon atoms;

$M^{2A}$  is silicon, germanium, or tin;

$A^A$  is  $-O-$ ,  $-S-$ ,  $-NR^{19A}-$ ,  $-PR^{19A}-$ ,  
 $-O-R^{19A}$ ,  $-NR^{19A}_2$ ,  $-PR^{19A}_2$ , or an  
 unsubstituted, substituted or fused,  
 heterocyclic ring system, where

$R^{19A}$  are identical or different, and are each  
 independently of one another,  $C_1$ - $C_{10}$ -  
 alkyl,  $C_6$ - $C_{15}$ -aryl,  $C_3$ - $C_{10}$ -cycloalkyl,  
 $C_7$ - $C_{18}$ -alkylaryl, or  $-Si(R^{20A})_3$ ;

$R^{20A}$  is hydrogen,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{15}$ -aryl  
 which optionally bear  $C_1$ - $C_4$ -alkyl groups  
 as substituents, or  $C_3$ - $C_{10}$ -cycloalkyl;  
 and

$v^A$  is 1 or, if  $A^A$  is an unsubstituted,



substituted or fused, heterocyclic ring  
system, 1 or 0

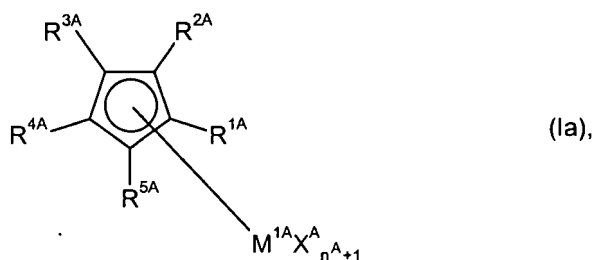
or  $R^{4A}$  and  $R^{12A}$  together form  $-R^{15A}-$ .

32. (Previously presented) The process for preparing a  
catalyst solid for olefin polymerization as claimed in claim  
31, wherein

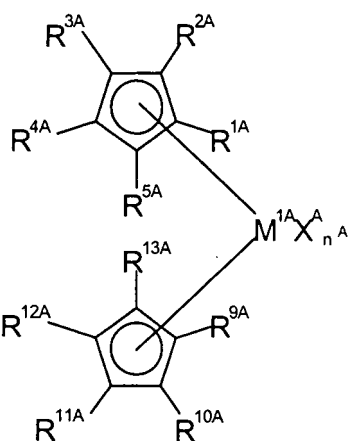
$X^A$  are identical, and are fluorine, chlorine,  
bromine,  $C_1$ - $C_7$ -alkyl or arylalkyl, or two  $X^A$   
together form, a 1,3-diene ligand, or a biaryloxy  
group; and

$M^{2A}$  is silicon.

33. (Previously presented) The process for preparing a  
catalyst solid for olefin polymerization as claimed in claim  
31, wherein the compound of formula (I) is selected from the  
group consisting of



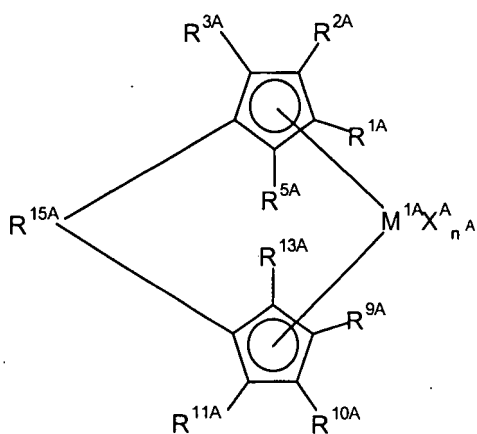
5



(lb),

10

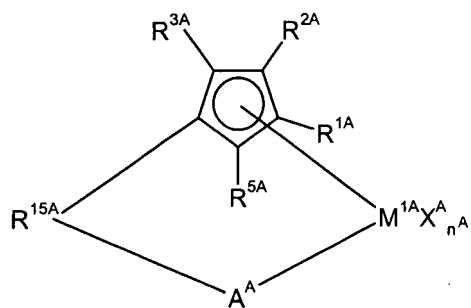
15



(lc) and

20

25



(ld)

30

wherein in formula (Ia)

$M^{1A}$  is titanium or chromium;

35  $X^A$  is chlorine,  $C_1$ - $C_4$ -alkyl, phenyl, alkoxy, or aryloxy;

$n^A$  is 1 or 2; and

40  $R^{1A}$  to  $R^{5A}$  are each hydrogen, or  $C_1$ - $C_4$ -alkyl, or two adjacent  $R^{1A}$  to  $R^{5A}$  radicals together with the

atoms connecting them form a substituted or unsubstituted, unsaturated six-membered ring;

5 wherein in formula (Ib)

$M^{1A}$  is titanium, zirconium, hafnium, or chromium;  
 $X^A$  is chlorine,  $C_1$ - $C_4$ -alkyl, or benzyl, or two  $X^A$  radicals form a substituted or unsubstituted  
10 butadiene ligand;  
 $n^A$  is 1 or 2, with the proviso that if  $M^{1A}$  is chromium, then  $n^A$  is 0;  
 $R^{1A}$  to  $R^{5A}$  are each hydrogen,  $C_1$ - $C_8$ -alkyl,  $C_6$ - $C_{10}$ -aryl, -  
15  $NR^{8A}_2$ ,  $-OSiR^{8A}_3$ ,  $-SiR^{8A}_3$ , or  $-Si(R^{8A})_3$ ; and  
 $R^{9A}$  to  $R^{13A}$  are each hydrogen,  $C_1$ - $C_8$ -alkyl,  $C_6$ - $C_{10}$ -aryl, -  
 $NR^{8A}_2$ ,  $-OSiR^{8A}_3$ ,  $-SiR^{8A}_3$ , or  $-Si(R^{8A})_3$ ;  
or two  $R^{1A}$  to  $R^{5A}$  radicals and/or two  $R^{9A}$  to  $R^{13A}$  radicals  
20 together with the cyclopentadienyl ring form an indenyl or substituted indenyl system;

wherein in formula (Ic)

25  $R^{1A}$  and  $R^{9A}$  are identical or different, and are each independently of one another, hydrogen, or a  $C_1$ - $C_{10}$ -alkyl group;  
30  $R^{5A}$  and  $R^{13A}$  are identical or different, and are each independently of one another, hydrogen, methyl, ethyl, isopropyl, or tert-butyl;  
 $R^{3A}$  and  $R^{11A}$  are each  $C_1$ - $C_4$ -alkyl; and  
35  $R^{2A}$  and  $R^{10A}$  are each hydrogen; or two adjacent  $R^{2A}$  and  $R^{3A}$  radicals, or two  $R^{10A}$  and  $R^{11A}$  radicals together form a saturated or unsaturated cyclic group comprising from 4 to 44 carbon atoms;  
40  $R^{15A}$  is  $-M^{2A}R^{16A}R^{17A}-$ ,  $-CR^{16A}R^{17A}-CR^{16A}R^{17A}-$ ,  $-BR^{16A}-$ ,

or  $-\text{BNR}^{16\text{A}}\text{R}^{17\text{A}}-$  ;  
M<sup>1A</sup> is titanium, zirconium, or hafnium; and  
X<sup>A</sup> are identical or different and are each  
5 chlorine, C<sub>1</sub>-C<sub>4</sub>-alkyl, benzyl, phenyl, or C<sub>7</sub>-  
C<sub>15</sub>-alkylaryloxy;

wherein in formula (Id)

10 M<sup>1A</sup> is titanium, or zirconium;  
X<sup>A</sup> is chlorine, C<sub>1</sub>-C<sub>4</sub>-alkyl, or phenyl, or  
two X radicals together form a  
substituted or unsubstituted butadiene  
15 ligand;  
R<sup>15A</sup> is  $-\text{SiR}^{16\text{A}}\text{R}^{17\text{A}}-$ , or  $-\text{CR}^{16\text{A}}\text{R}^{17\text{A}}-\text{CR}^{16\text{A}}\text{R}^{17\text{A}}-$ ;  
and  
A<sup>A</sup> is  $-\text{O}-$ ,  $-\text{S}-$ , or  $-\text{NR}^{19\text{A}}-$ ;  
20 R<sup>1A</sup> to R<sup>3A</sup> and R<sup>5A</sup> are each hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>3</sub>-  
C<sub>10</sub>-cycloalkyl, C<sub>6</sub>-C<sub>15</sub>-aryl, or  $-\text{Si}(\text{R}^{8\text{A}})_3$ ,  
or two adjacent radicals form a cyclic  
group comprising from 4 to 12 carbon  
25 atoms.

34. (Previously presented) The process for preparing a  
catalyst solid for olefin polymerization as claimed in claim  
29, wherein the component (A) is  
30 bis(cyclopentadienyl)zirconium dichloride,  
bis(pentamethylcyclopentadienyl)zirconium dichloride,  
bis(methylcyclopentadienyl)zirconium dichloride,  
bis(ethylcyclopentadienyl)zirconium dichloride,  
35 bis(n-butylcyclopentadienyl)zirconium dichloride,  
bis(1-n-butyl-3-methylcyclopentadienyl)zirconium dichloride,  
bis(indenyl)zirconium dichloride,  
bis(tetrahydroindenyl)zirconium dichloride,  
40 bis(trimethylsilylcyclopentadienyl)zirconium dichloride,

bis(cyclopentadienyl)zirconium dimethyl,  
 bis(pentamethylcyclopentadienyl)zirconium dimethyl,  
 bis(methylcyclopentadienyl)zirconium dimethyl,  
 bis(ethylcyclopentadienyl)zirconium dimethyl,  
 5 bis(n-butylcyclopentadienyl)zirconium dimethyl,  
 bis(1-n-butyl-3-methylcyclopentadienyl)zirconium dimethyl,  
 bis(indenyl)zirconium dimethyl,  
 bis(tetrahydroindenyl)zirconium didimethyl,  
 10 bis(trimethylsilylcyclopentadienyl)zirconium dimethyl,  
 dimethylsilanediyl(2-methyl-4-phenylindenyl)-(2,5-dimethyl-  
 N-phenyl-4-azapentalene)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4-phenyl-4-  
 15 hydroazulenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-ethyl-4-phenyl-4-  
 hydroazulenyl)zirconium dichloride,  
 dimethylsilanediylbis(cyclopentadienyl)zirconium dichloride,  
 20 dimethylsilanediylbis(indenyl)zirconium dichloride,  
 dimethylsilanediylbis(tetrahydroindenyl)zirconium  
 dichloride,  
 ethylenebis(cyclopentadienyl)zirconium dichloride,  
 25 ethylenebis(indenyl)zirconium dichloride,  
 ethylenebis(tetrahydroindenyl)zirconium dichloride,  
 tetramethylethylene-9-fluorenylcyclopentadienylzirconium  
 dichloride,  
 30 dimethylsilanediylbis(3-tert-butyl-5-  
 methylcyclopentadienyl)zirconium dichloride,  
 dimethylsilanediylbis(3-tert-butyl-5-  
 ethylcyclopentadienyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methylindenyl)zirconium dichloride,  
 35 dimethylsilanediylbis(2-isopropylindenyl)zirconium  
 dichloride,  
 dimethylsilanediylbis(2-tert-butylindenyl)zirconium  
 dichloride,  
 40 diethylsilanediylbis(2-methylindenyl)zirconium dibromide,

dimethylsilanediylbis(3-methyl-5-  
 methylcyclopentadienyl)zirconium dichloride,  
 dimethylsilanediylbis(3-ethyl-5-  
 isopropylcyclopentadienyl)zirconium dichloride,  
 5 dimethylsilanediylbis(2-ethylindenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4,5-benzindenyl)zirconium  
 dichloride  
 dimethylsilanediylbis(2-ethyl-4,5-benzindenyl)zirconium  
 10 dichloride  
 methylphenylsilanediylbis(2-methyl-4,5-benzindenyl)zirconium  
 dichloride,  
 methylphenylsilanediylbis(2-ethyl-4,5-benzindenyl)zirconium  
 15 dichloride,  
 diphenylsilanediylbis(2-methyl-4,5-benzindenyl)zirconium  
 dichloride,  
 diphenylsilanediylbis(2-ethyl-4,5-benzindenyl)zirconium  
 20 dichloride,  
 diphenylsilanediylbis(2-methylindenyl)hafnium dichloride,  
 dimethylsilanediylbis(2-methyl-4-phenylindenyl)zirconium  
 dichloride,  
 25 dimethylsilanediylbis(2-ethyl-4-phenylindenyl)zirconium  
 dichloride,  
 dimethylsilanediylbis(2-methyl-4-(1-  
 naphthyl)indenyl)zirconium dichloride,  
 30 dimethylsilanediylbis(2-ethyl-4-(1-  
 naphthyl)indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-propyl-4-(1-  
 naphthyl)indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-i-butyl-4-(1-  
 35 naphthyl)indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-propyl-4-(9-  
 phenanthryl)indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4-isopropylindenyl)zirconium  
 40 dichloride,

dimethylsilanediylbis(2,7-dimethyl-4-  
 isopropylindenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4,6-  
 diisopropylindenyl)zirconium dichloride,  
 5 dimethylsilanediylbis(2-methyl-4-[p-  
 trifluoromethylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4-[3',5'-  
 dimethylphenyl]indenyl)zirconium dichloride,  
 10 dimethylsilanediylbis(2-methyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 diethylsilanediylbis(2-methyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 15 dimethylsilanediylbis(2-ethyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-propyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 20 dimethylsilanediylbis(2-isopropyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-n-butyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 25 dimethylsilanediylbis(2-hexyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediyl(2-isopropyl-4-phenylindenyl)-(2-methyl-4-  
 phenylindenyl)zirconium dichloride,  
 30 dimethylsilanediyl(2-isopropyl-4-(1-naphthyl)indenyl)-(2-  
 methyl-4-(1-naphthyl)indenyl)zirconium dichloride,  
 dimethylsilanediyl(2-isopropyl-4-[4'-tert-  
 butylphenyl]indenyl)-(2-methyl-4-[4'-tert-butylphenyl]-  
 indenyl)zirconium dichloride,  
 35 dimethylsilanediyl(2-isopropyl-4-[4'-tert-  
 butylphenyl]indenyl)-(2-ethyl-4-[4'-tert-butylphenyl]-  
 indenyl)zirconium dichloride,  
 dimethylsilanediyl(2-isopropyl-4-[4'-tert-  
 40 butylphenyl]indenyl)-(2-methyl-4-[3',5'-bis-tert-

butylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediyl(2-isopropyl-4-[4'-tert-  
 butylphenyl]indenyl)-(2-methyl-4-[1'-naphthyl]indenyl)-  
 zirconium dichloride,  
 5 ethylene(2-isopropyl-4-[4'-tert-butylphenyl]indenyl)-(2-  
 methyl-4-[4'-tert-butylphenyl]indenyl)zirconium dichloride,  
 di(2,6-di-i-propylphenyl)-2,3-  
 dimethyldiazabutadienepalladium dichloride,  
 10 di(di-i-propylphenyl)-2,3-dimethyldiazabutadienenickel  
 dichloride,  
 di(2,6-di-i-propylphenyl)-2,3-  
 dimethyldiazabutadienedimethylpalladium,  
 15 di(2,6-di-i-propylphenyl)-2,3-  
 dimethyldiazabutadienedimethylnickel,  
 di(2,6-dimethylphenyl)-2,3-dimethyldiazabutadienepalladium  
 dichloride,  
 20 di(2,6-dimethylphenyl)-2,3-dimethyldiazabutadienenickel  
 dichloride,  
 di(2,6-dimethylphenyl)-2,3-  
 dimethyldiazabutadienedimethylpalladium,  
 25 di(2,6-dimethylphenyl)-2,3-  
 dimethyldiazabutadienedimethylnickel,  
 di(2-methylphenyl)-2,3-dimethyldiazabutadienepalladium  
 dichloride,  
 30 di(2-methylphenyl)-2,3-dimethyldiazabutadienenickel  
 dichloride,  
 di(2-methylphenyl)-2,3-  
 dimethyldiazabutadienedimethylpalladium,  
 di(2-methylphenyl)-2,3-dimethyldiazabutadienedimethylnickel,  
 35 diphenyl-2,3-dimethyldiazabutadienepalladium dichloride,  
 diphenyl-2,3-dimethyldiazabutadienenickel dichloride,  
 diphenyl-2,3-dimethyldiazabutadienedimethylpalladium,  
 diphenyl-2,3-dimethyldiazabutadienedimethylnickel,  
 40 di(2,6-dimethylphenyl)azanaphthenepalladium dichloride,



di(2,6-dimethylphenyl)azanaphthenenickel dichloride,  
 di(2,6-dimethylphenyl)azanaphthenedimethylpalladium,  
 di(2,6-dimethylphenyl)azanaphthenedimethylnickel,  
 1,1'-bipyridylpalladium dichloride,  
 5 1,1'-bipyridylnickel dichloride,  
 1,1'-bipyridyldimethylpalladium,  
 1,1'-bipyridyldimethylnickel,  
 1-(8-quinolyl)-2-methyl-4-  
 10 methylcyclopentadienylchromium(III) dichloride,  
 1-(8-quinolyl)-3-isopropyl-5-  
 methylcyclopentadienylchromium(III) dichloride,  
 1-(8-quinolyl)-3-tert-butyl-5-  
 15 methylcyclopentadienylchromium(III) dichloride,  
 1-(8-quinolyl)-2,3,4,5-  
 tetramethylcyclopentadienylchromium(III) dichloride,  
 1-(8-quinolyl)tetrahydroindenylchromium(III) dichloride,  
 20 1-(8-quinolyl)indenylchromium(III) dichloride,  
 1-(8-quinolyl)-2-methylindenylchromium(III) dichloride,  
 1-(8-quinolyl)-2-isopropylindenylchromium(III) dichloride,  
 1-(8-quinolyl)-2-ethylindenylchromium(III) dichloride,  
 25 1-(8-quinolyl)-2-tert-butylindenylchromium(III) dichloride,  
 1-(8-quinolyl)benzindenylchromium(III) dichloride,  
 1-(8-quinolyl)-2-methylbenzindenylchromium(III) dichloride,  
 1-(8-(2-methylquinolyl))-2-methyl-4-  
 30 methylcyclopentadienylchromium(III) dichloride,  
 1-(8-(2-methylquinolyl))-2,3,4,5-  
 tetramethylcyclopentadienylchromium(III) dichloride,  
 1-(8-(2-methylquinolyl))tetrahydroindenylchromium(III)  
 dichloride,  
 35 1-(8-(2-methylquinolyl))indenylchromium(III) dichloride,  
 1-(8-(2-methylquinolyl))-2-methylindenylchromium(III)  
 dichloride,  
 1-(8-(2-methylquinolyl))-2-isopropylindenylchromium(III)  
 40 dichloride,

1-(8-(2-methylquinolyl))-2-ethylindenylchromium(III)  
dichloride,  
1-(8-(2-methylquinolyl))-2-tert-butylindenylchromium(III)  
dichloride,  
5 1-(8-(2-methylquinolyl))benzindenylchromium(III) dichloride,  
1-(8-(2-methylquinolyl))-2-methylbenzindenylchromium(III)  
dichloride,  
[1,3,5-tri(methyl)-1,3,5-triazacyclohexane]chromium  
10 trichloride,  
[1,3,5-tri(ethyl)-1,3,5-triazacyclohexane]chromium  
trichloride,  
[1,3,5-tri(octyl)-1,3,5-triazacyclohexane]chromium  
15 trichloride,  
[1,3,5-tri(dodecyl)-1,3,5-triazacyclohexane]chromium  
trichloride,  
[1,3,5-tri(benzyl)-1,3,5-triazacyclohexane]chromium  
20 trichloride, or mixtures thereof.

35. (Previously presented) The process for preparing a  
catalyst solid for olefin polymerization as claimed in claim  
25 21, wherein said organometallic compound of formula (V) is  
n-butyllithium, n-butyl-n-octylmagnesium, n-butyl-n-  
heptylmagnesium, triphenylaluminum, triisoprenaluminum, tri-  
n-octylaluminum, tri-n-hexylaluminum, tri-n-butylaluminum,  
30 triisobutylaluminum, tri-n-propylaluminum, tri-  
isopropylaluminum, triethylaluminum,  
tris(pentafluorophenyl)borane, trimethylaluminum, or mixtures  
thereof.

35 36. (Previously presented) The process for preparing a  
catalyst solid for olefin polymerization as claimed in claim  
34, wherein said organometallic compound of formula (V) is  
n-butyllithium, n-butyl-n-octylmagnesium, n-butyl-n-  
40 heptylmagnesium, triphenylaluminum, triisoprenaluminum, tri-

n-octylaluminum, tri-n-hexylaluminum, tri-n-butylaluminum,  
triisobutylaluminum, tri-n-propylaluminum, tri-  
isopropylaluminum, triethylaluminum,  
tris(pentafluorophenyl)borane, trimethylaluminum, or mixtures  
5 thereof.

37. (Previously presented) The process for preparing a  
catalyst solid for olefin polymerization as claimed in claim  
10 21, wherein said organometallic compound of formula (V) is  
at least one borinic acid of formula  $R^4_2B(OH)$ , or at least  
one boronic acid of formula  $R^4B(OH)_2$ .

15 38. (Previously presented) The process for preparing a  
catalyst solid for olefin polymerization as claimed in claim  
21, wherein said Lewis base is methylamine, aniline,  
dimethylamine, diethylamine, N-methylaniline, diphenylamine,  
20 trimethylamine, triethylamine, tripropylamine,  
tributylamine, N,N-dimethylaniline, N,N-diethylaniline, N,N-  
dimethylcyclohexylamine, benzylamine, N-benzyl dimethylamine,  
N-benzyl diethylamine, N-benzyl butylamine, N-benzyl-tert-  
25 butylamine, N'-benzyl-N,N-dimethylethylenediamine,  
N-benzylethylenediamine, N-benzylisopropylamine, N-  
benzylmethylamine, N-benzylethylamine, N-benzyl-1-  
phenylethylamine, N-benzyl-2-phenylethylamine, N-  
30 benzylpiperazine, or mixtures thereof.

39. (Previously presented) The process for preparing a  
catalyst solid for olefin polymerization as claimed in claim  
35 37, wherein said Lewis base is methylamine, aniline,  
dimethylamine, diethylamine, N-methylaniline, diphenylamine,  
trimethylamine, triethylamine, tripropylamine,  
tributylamine, N,N-dimethylaniline, N,N-diethylaniline, N,N-  
dimethylcyclohexylamine, benzylamine, N-benzyl dimethylamine,  
40 N-benzyl diethylamine, N-benzyl butylamine, N-benzyl-tert-

butylamine, N'-benzyl-N,N-dimethylethylenediamine,  
N-benzylethylenediamine, N-benzylisopropylamine, N-  
benzylmethanamine, N-benzylethylamine, N-benzyl-1-  
phenylethylamine, N-benzyl-2-phenylethylamine, N-  
benzylpiperazine, or mixtures thereof.

40. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 21, wherein in  
formula (V)

$M^1$  is lithium, boron, magnesium, or  
aluminum; and

$R^1$ ,  $R^2$ , and  $R^3$  are each a  $C_1$ - $C_{10}$ -alkyl.